Food and Agriculture Organization of the United Nations

Connecting forest and farm producer organizations to climate change finance

A toolkit for Apex Forest and Farm Producer Organizations (FFPOs)

Forest and Farm Facility

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Forest and Farm Facility

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Food and Agriculture Organization of the United Nations
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Acronyms

AFLOU	Agriculture, Forestry and Other Land Use
AFR100	African Forest Landscape Restoration Initiative
CI	Conservation International
CIF	Climate Investment Funds
CFUGs	community forest user groups
DGM	Dedicated Grant Mechanism
FAO	Food and Agriculture Organization of the United Nations
FECOFUN	Federation of Community Forestry Users Nepal
FFF	Forest and Farm Facility
FFPs	Forest and Farm Producers
FFPOs	Forest and Farm Producer Organizations
FLR	forest and landscape restoration
GCF	Green Climate Fund
GEF	Global Environment Facility
GHG	greenhouse gases
IIED	International Institute for Environment and Development
IUCN	International Union for Conservation of Nature
MBR	Mayan Biosphere Reserve
MRV	monitoring, reporting and verification
NAMAs	Nationally Appropriate Mitigation Actions
NAPs	National Adaptation Plans
NAPAs	National Adaptation Programmes of Action
NDCs	Nationally Determined Contributions
NWFPs	non-wood forest products
REDD+	Reducing Emissions from Deforestation and Forest Degradation
SDGs	Sustainable Development Goals
UNFCCC	United Nations Framework Convention on Climate Change
WCS	Wildlife Conservation Society
WRI	World Resources Institute
ZNFU	Zambia National Farmers' Union

Executive summary

Forest and Farm Producer Organizations (FFPOs) are well suited to spearhead widespread adoption of on-farm climate change adaptation and mitigation practices due to their strengths in organizing and mobilizing large numbers of private forest and farm producers and channeling information to them. Apex FFPOs – national-level representatives and coordinators of local-level FFPOs – are the natural representatives of FFPOs when it comes to working to access climate change finance in support of actions by local farm and forest producers. Apex FFPOs thus are the target audience of this report.

A number of multilateral and global sources of finance are available in support of the efforts of countries in the Global South to contribute to climate change mitigation and to adapt to the negative effects of climate change. The pool of global climate change finance is quite vast; however, the processes for distributing funds is complex and not completely transparent. In nearly all cases, multilateral funds are allocated in any given country in coordination with a national liaison office that acts as the connection between the national government and the global finance authorities. In any given country, accessing multilateral funds requires establishing a relationship with the national liaison office. Accessing bilateral funds is less daunting in principle, but it still requires presenting FFPOs as attractive partners to execute climate change mitigation and adaptation priority actions, and making this case to those who control the funds.

FFPOs are potentially strong partners because they are a vehicle to organize and mobilize a vast population of farm and forest operators. These operators inhabit a very large area of land with strong potential for contributing to climate change mitigation and a strong need for support in climate change adaptation. Apex FFPOs in many or most countries can make a strong case that achieving national climate change mitigation and adaptation objectives requires moving beyond public lands to the private, communal and Indigenous lands that FFPOs can help mobilize access to.

This toolkit does not provide a step-by-step guide for accessing global climate change finance, because the situation is very different in each country and a universally applicable checklist of steps to take is not possible to provide. However, the toolkit does provide a set of steps for apex FFPOs to figure out what they need to do in their particular country to set themselves up to access climate finance.

The toolkit also provides a brief overview of actual practices that forest and farm producers can pursue. This overview is intentionally brief, partly because the main focus of the toolkit is access to climate change finance, and partly because what set of practices is appropriate for a given producer varies with geographic and socioeconomic conditions.

The toolkit is organized as follows:

Section 1 briefly introduces climate change, climate change mitigation and adaption, and the potential roles of FFPOs.

Section 2 provides a brief background on the on-farm practices that forest and farm producers can undertake in support of climate change mitigation and adaptation. This is a very broad topic and the appropriate specific practices will vary greatly by location, so this toolkit does not try to go into any detail on this issue. It provides links to other documents where more specific information can be obtained.

Section 3 summarizes some of the arguments that apex FFPOs can make in support of their efforts to attract funds for FFPOs to undertake climate change mitigation and adaptation activities. For example, the large area of land that forest and farm producers control, and the capability of FFPOs to mobilize them, are extremely important assets that apex FFPOs can draw attention to.

Section 4 discusses precautions that apex FFPOs must take if in fact they are successful in attracting climate change finance. One is to extend funds only to local FFPOs that have demonstrated that they are capable of managing funds on behalf of their members in a fair and transparent way, in order to avoid conflict that could undermine all that FFPOs are trying to accomplish. The second, related point is to anticipate pressure to expend funds quickly in response to donors' immediate needs to issue their available funds and see to it that they are expended in a timely manner. If this situation occurs, it is important for apex FFPOs to resist pressure to extend funds to local FFPOs that are not ready to manage them.

Section 5 provides guidance to apex FFPOs on the steps that they can take to begin to access climate change finance in their country. As mentioned above, it is not possible to present a step-by-step guide in this toolkit because the situation is different in each country. Rather, this section presents the steps that apex FFPOs can take to produce their own step-by-step guide in their own country.

The appendix provides an overview of multilateral and bilateral funding sources for climate change mitigation and adaptation, including examples of the kinds of activities that they support. The purpose of this section is simply to provide initial information at a glance. Links to additional documents that describe each programme in more detail are provided. Any climate change finance programmes referred to in the document are described in more detail in the appendix.

1. Background

Global climate change is a human-caused phenomenon that results from increased concentration of carbon dioxide (CO_2) in the atmosphere. The main cause of increased CO_2 is emissions from burning fossil fuels for energy, for example for transportation and for heating and cooling buildings. Global deforestation is another important cause since trees absorb CO_2 from the atmosphere, and fewer trees mean less absorption. Each individual litre of fuel burned, or each specific tree removed, does not make a noticeable difference in the global climate, but on a vast scale over hundreds of years, the effect is large. Because Earth's atmosphere is a single global system, CO_2 emissions anywhere on the planet influence the global climate – the geographic source does not matter.

Climate change poses a grave threat to ecosystems around the planet, changing the weather patterns that people have grown to expect over the centuries and bringing more frequent extreme weather events. It causes changes to natural resource-based production systems and raises the frequency of disastrous weather that brings economic hardship and loss of life.

Climate change mitigation refers to efforts to slow down or even stop climate change by reducing the amount of gases in the atmosphere that contribute to it. One of the most important such gases is carbon dioxide (CO_2). As mentioned above the main source of CO_2 emissions is burning fossil fuels like petrol and diesel, so transportation, industry, and heating and cooling of buildings are major sources. But forestry plays a very important role too, because trees and other plants remove CO_2 from the atmosphere as part of the photosynthesis process. This means that planting more trees can reduce the amount of CO_2 in the atmosphere. In contrast, deforestation reduces the Earth's ability to absorb CO_2, making it an important contributor to climate change. Again, the specific geographic location does not matter: trees located anywhere on Earth perform the same function of absorbing CO_2 from the atmosphere. As a result of these factors, global climate funds are available to promote reforestation and prevent deforestation.

Carbon accounting is the process of estimating the amount of CO_2 emissions associated with an activity such as burning fuel, or the converse, the amount of CO_2 sequestered (removed from the atmosphere) from an activity such as planting and maintaining a tree. It is particularly important for global climate change mitigation funds because a specific amount of funding is meant to be tied to a specific level of CO_2 emissions reduction or sequestration. In this context, carbon accounting becomes very complicated because emissions reduction and sequestration must be counted only to the extent that they are additional to what would have happened even without special climate mitigation funding. In other words, in the case of carbon sequestration through tree-planting, **additionality** is the extra carbon sequestration achieved by planting and maintaining trees that would not have been planted and maintained without the special climate funding. Another concern in carbon accounting is **leakage**. Taking the example of protecting against

deforestation, a carbon fund manager would not want to provide funding to protect one area against deforestation simply so that the forest managers allow another area to be deforested instead. In this sense, leakage and additionality are closely related because if there is leakage, it reduces additionality.

Climate change adaptation refers to helping protect the people and the natural resource base against the effects of climate change. Climate change brings a variety of changes in any given location, including changes in the length of the seasons (cool or cold season, hot season, wet season, dry season), and changes in precipitation, either wetter or drier depending on the location. Climate change also brings an increase in extreme weather events, such as severe storms, severe droughts, severe floods, severe heat and severe cold. Severe events threaten immediate loss of life. But even the less severe aspects of climate change also bring major challenges, especially to forest and farm producers. Relatively minor but permanent changes in temperatures and precipitation mean that previously well-adapted trees, other perennials and annual crops may no longer flourish in areas where they have always been found. Forest and farm producers (FFPs) will have to observe changes to their farm ecology, but they will also have to obtain expert information both about the likely directions of climate change and about the kinds of plants that are likely to thrive in their location as the climate continues to change. In addition, to protect against the increase in extreme weather events, FFPs are advised to diversify their production systems in order to be better prepared for whatever comes. A mixture of different tree species and different crops and crop varieties can help producers manage whether the weather is too dry or too wet, for example. And a mixture in the age of tree stands can reduce financial loss in the event of a catastrophic weather event. Increases in fire from longer droughts and diseases that may result from too much moisture or drought may also pose threats to forests and agroforestry systems. This may lead to the need for other forms of financing to cover insurance or relief from such impacts for FFPO members. Steps that FFPs can take to help adapt to climate change are discussed further in section 2. Being able to adapt to these changes as they occur, or avoid them, is part of **climate resilience.**

The **United Nations Framework Convention on Climate Change (UNFCCC)** is an international treaty signed in 1992. Global negotiations take place under the UNFCCC on a regular basis, and countries have agreed to specific measures they will take to reduce CO_2 emissions. The UNFCCC and its member states are working to develop and implement strategies to decarbonize the global economy and therefore reduce GHG emissions in order to keep the average global temperature rise below 2 ^{o}C and as close as possible to 1.5 ^{o}C. To achieve this target, countries are working on implementing policies, incentives schemes and investment programmes to reduce emissions in energy, transportation, buildings, industry, agriculture, forestry and other land use, and waste management sectors.

The UNFCCC establishes that all countries should make efforts to reduce their greenhouse gas (GHG) emissions based on their capabilities and historical responsibilities. Countries must develop Nationally Appropriate Mitigation Actions

(NAMAs)[1] with technical and financial support of developed countries. In 2015, countries submitted their Nationally Determined Contributions[2] (NDCs) that spell out each country's planned reduction in GHG emissions.

Regarding adaptation, under the UNFCCC countries are taking actions at the local, subnational, national, regional and international levels for long-term strategies to protect people, livelihoods and ecosystems from the negative effects of climate change. Countries are also developing National Adaptation Programmes of Action (NAPAs)[3] and National Adaptation Plans (NAPs)[4] to respond in an effective way to climate change threats. The UNFFCCC encourages countries to engage multiple stakeholders, including Indigenous communities and local groups, to develop and support adaptation plans and measurements.

Global funding mechanisms to promote climate change mitigation and adaptation have been established under the UNFCCC. More details and specific examples of international programmes for climate change finance are provided in the appendix. Adaptation funds are a form of foreign aid, intended to lessen the burden a country faces as a result of climate change. In contrast, accepting climate mitigation funds, for example in support of increasing forest cover or protecting against deforestation, constitutes a contractual obligation in support of the country's international commitments under the UNFCCC.

In principle, funds for climate mitigation and adaptation are accessible by all sectors of the economy: government, private and voluntary. For bilateral funds this is largely the case. For multilateral funds, on the other hand, because funds are disbursed in accordance with a country's official commitments to the UNFCCC, they are only made available in a given country through an official office that acts as the liaison between the government and the UNFCCC. This means that accessing such funds is only feasible via arrangements with that office. To date, there are examples of smallholder FFPs accessing climate mitigation and adaptation funds, but they are the exception globally, and they all involve cases where the FFPs' representatives are in close coordination with the relevant government authorities.

Forest and landscape restoration (FLR) is an approach that aims at restoring the ecological integrity and functionality of degraded landscapes. This approach brings a holistic perspective to address different land uses, tenure and governance systems and cultural practices that interact at landscape level. Landscape restoration combines practices and techniques such as planting trees, management

[1] NAMAs refer to any action that reduces emissions in developing countries and is prepared under the umbrella of a national governmental initiative. See https://unfccc.int/topics/mitigation/workstreams/nationally-appropriate-mitigation-actions

[2] https://www4.unfccc.int/sites/NDCStaging/Pages/Home.aspx

[3] In 2001, at COP 7 in Marrakesh, Parties acknowledged the specific needs of least developed countries (LDCs), in that they are least capable of dealing with the adverse effects of climate change, and adopted a dedicated package of decisions to support them

[4] At COP 16 (2010) it was established that countries have to formulate and implement NAPs as a means of identifying medium- and long-term adaptation needs and developing and implementing strategies and programmes

of natural regeneration, agroforestry systems, soil conservation practices, etc., to restore and rehabilitate the ecological and economic functionality of degraded forests and lands.

Landscape restoration is gaining more attention due to its enormous contribution for climate change mitigation and adaptation. Landscape restoration practices capture CO_2 through planting trees, agroforestry practices and soil conservation and rehabilitation. The adequate management of landscapes contributes to avoided deforestation by conservation of natural forests and management of natural regeneration. These aspects create strong synergies with other approaches, particularly with REDD+. The restoration and rehabilitation of degraded landscapes delivers benefits for climate change adaptation. The ecosystem services that restored landscapes provide are fundamental to secure the livelihood and food security and nutrition of vulnerable people. Additionally they bring benefits for biodiversity conservation by connecting patches of forests and habitats of threatened species.

Around the world, several countries have set ambitious commitments towards FLR and various initiatives are joining efforts to achieve countries' commitments. The Bonn Challenge,[5] for example, is a global effort that aims at restoring 350 million hectares of degraded landscapes by 2030. The Initiative 20x20[6] is a regional effort to restore 20 million hectares in the Latin American and Caribbean countries by 2020. The AFR100[7] (the African Forest Landscape Restoration Initiative) is an effort of African countries to bring 100 million hectares of land under restoration by 2030.

[5] http://www.bonnchallenge.org/content/challenge
[6] https://initiative20x20.org/
[7] https://afr100.org/

2. Types of activities and investments funded under climate change finance

International funding related to climate change that is potentially available to FFPOs covers both climate change adaptation and mitigation, and it covers land uses that might be classified as agriculture or as forestry. Some of the land uses that FFPs might undertake can have effects both in climate adaptation and mitigation – there are synergies between the two and sometimes dividing them into separate discussions is rather artificial. Farmers almost always plant both trees and crops, and often the two are an integral whole, divided arbitrarily only by the growth period of the plants in question.

This section provides a brief summary of on-farm climate change mitigation and adaptation activities. The discussion of actual practices that forest and farm producers can pursue is intentionally brief, partly because the main focus of this toolkit is access to climate change finance, and partly because what set of practices is appropriate for a given producer varies with geographic and socioeconomic conditions. Therefore, it is important to seek guidance from local experts. Several much more detailed sources of specific information, including from FAO sourcebooks, are listed below.

2.1. Climate adaptation activities

As introduced above, adaptation to climate change means making one's livelihood less vulnerable to the changing climate, including extreme weather events. Farm and forest producers are particularly vulnerable to climate change because their sources of income are climate-dependent. It is something that all farm and forest producers should strive for, independent of the availability of funds to assist in the process.

This subsection summarizes the broad categories of practices that farm and forest producers can take to make their livelihoods more adaptable to climate change. Broadly speaking, three important ways to reduce exposure to climate variability are as follows:

1. **Environmental adaptation:** Diversify land use to be less vulnerable to changes in the climate. This means diversifying crops and trees and other perennials in such a way that different parts of the farming system are more resilient for different weather situations that might arise. It includes using plants and management practices known to be suitable for expected climate patterns in a given location.

2. **Economic adaptation:** Diversify household sources of income to be less vulnerable to changes in the climate. This includes incorporating sources of income that are not dependent on the land.

3. **Social adaptation:** Have access to assistance, including insurance, in the event of a climate disaster. Clearly, this is not a factor that any given farm and forest producer can control completely, but the networking capacity of FFPOs can be useful in this regard.

Climate finance is available primarily for the first of these three ways, so that is the focus of this section. More details about social adaptation – the social and cultural services that FFPOs can provide to their members – are available in the following Forest and Farm Facility (FFF) document prepared by the International Institute for Environment and Development (IIED): *How forest and farm producer organizations deliver social and cultural services*.[8]

On-farm adaptation practices

Climate change is expected to have different impacts in different places. Some places will become drier overall, some places wetter. However, even places that become generally wetter should expect some years in which conditions are drier than they are accustomed to, and vice versa. Almost all places will get warmer, but they may also experience periods during the year that are colder than they have been in the past. In nearly all places, extreme weather events are expected to become more common.

Because climate change's weather effects vary by location, it is important to learn from local experts what is expected to happen to the climate, and what kinds of recommendations scientists are making for a particular area. Worldwide, agricultural scientists are collaborating with climate scientists to understand predicted weather patterns and to recommend ways to adapt agricultural systems to be better suited to anticipated changes. In addition, ordinary citizens can contribute to successful climate adaptation by consciously observing the effects of climate change and sharing this knowledge. They can benefit from observing closely and sharing information on how different varieties, crops, trees, forest types, animal breeds and combinations of management systems in a landscape respond to the changes as they occur.

A first step for adaptation is to carry out climate risk assessments. A climate risk assessment consists of identifying the hydro-meteorological risks that can affect the livelihoods of farmers, livestock herders, fishers and forest-dependent people. Guides to conduct a step-by-step assessment were published and are available online: (GIZ, EURAC & UNU-EHS, 2018)[9] and (FAO, 2017).[10]

Another step for adaptation is to take greater advantage of weather forecasting services. Unfortunately, in many places local weather forecasts are not available, so there is a continued need to promote establishment of local small weather stations.

[8] https://pubs.iied.org/pdfs/17704IIED.pdf
[9] https://www.adaptationcommunity.net/wp-content/uploads/2018/06/giz-eurac-unu-2018-en-guidebook-climate-risk-asessment-eba.pdf
[10] http://www.fao.org/3/a1247e/a1247e03.pdf

In some countries FFPOs have developed their own systems for passing on weather information to their members to help them make decisions such as when to schedule planting or harvesting.

Use of crops, trees and land management practices suited to expected climate patterns

As some places are predicted to experience greater drought and others experience increased rainfall, farm and forest operators can adjust the species and varieties of their annual crops and perennials including trees in order to be more compatible with predicted future weather patterns. A number of tree species can tolerate greater stress and their presence can help reduce local climate impacts, for example by providing shade from intense sun, and being able to draw on sources of moisture deeper in the soil. They can also adopt land management practices that are better suited for drought or flood, or possibly both. Because predicted changes vary by location, it is important to consult with local experts and other communities to identify specific approaches that work locally.

For example, agricultural scientists have long worked on breeding crops to be more tolerant to drought, or more tolerant to excess moisture, pests and diseases, or for different temperatures. The same goes for trees and other perennials. A range of agronomic practices is recommended for climate adaptation under different agroecological conditions; traditional knowledge holders and elders may also be familiar with extreme climate events in the past and the responses of different plants and crops, but describing them is beyond the scope of this toolkit.

As scientists work to develop better land management practices, it is important for farmers to become aware of them. In addition to seeking expert opinions to identify specific practices for immediate adoption, it is important for any given farm and forest producer to learn about the principles and to be prepared to experiment to find variations on recommended practices that work under that producer's conditions. More details about land management and agroecological zoning can be found below. [11] Exchange visits between producers and communities are an important source of information as well.

Crop diversification to prepare for variability

Because the changes are expected to involve increasing variability, one aspect of the recommended changes involves crop diversification.

Trees and other perennials can be an important part of a diversification strategy. They may be more resilient to variations in the climate, able to survive droughts or floods that might severely damage or destroy annual crops. On the other hand, a particularly extreme weather event could also destroy trees on the farm. Accordingly, keeping stands of trees of mixed species, from different sources, and of mixed ages, and harvesting part of the stand each year can reduce economic risk

[11] http://www.fao.org/3/W2962E/w2962e-03.htm

by avoiding the possibility that all the trees are destroyed at the same time, just before harvest. Keeping trees or other perennials that offer other economic benefits besides timber provides a steady stream of income, further reducing the risk or the impact of catastrophic loss. Experimenting with intercropping of other plants under the trees and of mixing trees with poultry, small livestock, fish ponds and other mixtures can also reduce risk.

Genetic diversity, both within and between species, is an important part of diversification as it can increase resistance to pests and diseases. This is extremely important in a changing climate, since pests and diseases flourish when plants are stressed or subjected to changing conditions.

Small farmers' strategies for adaptation in Tlaxcala, México

Maize is the dominant crop in the State of Tlaxcala. Approximately 50 percent of the maize production is dedicated for home consumption. As an annual crop, farmers depend on rainfall for planting and harvesting activities. Rainfall varies depending on the altitudinal zones and ranges from 400 mm to 1 200 mm per year. The rainy season is from April to September, permitting only one cycle of crops that can mature in a short period. The altitude of the State, 2 200 masl and higher, makes the crops sensitive to frost during the growing season. The probability of frost increases as temperatures decline in September and October. Furthermore, Tlaxcala also experiences a mid-summer drought (canícula) that usually takes place in July and August.

To face the environmental conditions mentioned above, farmers have identified different adaptation strategies. When rains are unusually late, farmers switch from maize to other, faster growing crops such as beans, wheat or barley. Farmers also consider alternative crops if the first maize planting is destroyed by frost. Among the alternatives to maize, farmers usually choose beans, as they are a staple of the household diet. When the probability of frost in September is coupled with the uncertainty of rain in April, farmers plant some plots with fast-maturing locally developed maize varieties, which, although they have lower yields and little demand in the markets, are more suitable for variable climatic conditions.

Farmers also alter the application of fertilizers and other inputs in response to climatic variability. Most of the agricultural inputs require soil humidity to be adequately absorbed by the plants. In periods of drought, farmers change the calendar of activities. They do not apply fertilizers and postpone any activities that require disturbing the soil in order to avoid water evaporation. These strategies mitigate some of the loss from rainfall. In the case of frost hazards, some farmers usually burn the rest of vegetation or fuelwood around the plots to alter the microclimatic conditions in the field. However, farmers agree that the best strategy to cope with frost-related risks consists of planting early and avoiding planting in valleys and deep gorges.

Source: Eakin, 2000.

Rainwater harvesting

Climate change affects the amount and distribution of rainfall. In some cases, the amount of rainfall is much less than the annual average. However, there are cases where although the annual average is still the same, the rainfall of a whole season is concentrated in a few days. Both cases cause water deficit that affects the availability for both agriculture and human consumption. One way to cope with water deficit is through rainwater harvesting.

Rainwater harvesting is used to catch and collect rainwater. For agricultural purposes, farmers can build small depressions or rainwater basins (usually coated by plastic to prevent rapid infiltration) in different points of the plot to store the water. A much more elaborate and expensive method is to build channels along the contours of fields and drive the water to concrete tanks to store a greater amount for longer periods. This water is then available to use during the dry season when there is a water shortage. It is important to note that such practices can be expensive in relation to the amount of water that is harvested, and their feasibility will vary greatly with the characteristics of local agricultural systems, including both socioeconomic and agroecological factors.

For domestic use, people can capture rainwater from roofs of buildings and store it in concrete or plastic deposits. This is a traditional practice in many low-rainfall areas and can be very effective.

Soil and moisture conservation

Soil and water conservation practices can help conserve scarce moisture in soil in areas subjected to more and longer dry spells. Mulching – spreading a layer of organic material over the soil – is an effective moisture conservation technique, though a shortage of mulching materials can make this challenging for some farmers.

Other techniques ranging from cultivating across the slope to conserve moisture behind ridges, to terracing of very steep land, can be effective for soil and water conservation. This toolkit does not go into any detail on such practices, but links to other documents and tools are provided just below.

Shade management

One of the main problems of climate change is extreme temperatures. It is increasingly common to observe higher and/or lower temperatures than the normal average. In tropical areas, farmers are facing problems of low rainfall and high temperatures combined, which leads to loss of crops.

Shade management, both temporary and permanent, helps to protect crops from heat, reduce direct exposure to sunshine and strong winds, and contribute to soil fertility. Trees for permanent shade usually require a long period to establish before

they can provide shade service. Therefore, the establishment of temporary shade using shrub species should be considered while trees are growing, as the shrubs will grow more rapidly and provide shade while the trees establish. The success of this practice depends on the selection of the right shrub and tree species and adequate spacing in the farm. It is important to consider additional benefits for the chosen tree species. Some species can provide fruits, seeds or timber that can generate additional income. However, an excess of shade during wet/rainy seasons can create problems of pests and diseases. Likewise, too many trees generate competition for water, light and nutrients. Additionally, not all crops can grow under canopy and yields might be reduced, therefore the decision on whether or not to use shade will depend on the type of crops and the extent of droughts and/or extreme temperatures. Some communities have developed systems which combine trees that lose their leaves when annual crops need the most sun; this is another way to consider the use of shade.

Protection against extreme winds becomes very important in a changing climate, since a single extreme wind event can destroy an entire production system. Shelter belts to protect against winds are an important practice, as is staggered planting to reduce the risk that an entire stock of trees is wiped out shortly before it is scheduled for harvest.

A more detailed list of adaptation practices for different productive sectors such as agriculture, forestry, livestock, fisheries, etc., can be found on this FAO website on Climate-Smart Agriculture.[12] With this link, readers can access the resource materials from FAO's work on "climate-smart agriculture." This term is often used in agricultural systems which are not so closely associated with forests and trees, but this does not mean it is not smart to integrate trees in agroforestry systems! In fact the use of trees and agroforestry systems may be considered the "smartest" climate responses in climate-smart agriculture.

Landscape-level adaptation practices

Land-use changes at the landscape-level, as opposed to just the farm-level, are an important area for both climate change mitigation and adaptation. The logic of a landscape level approach is that it allows a more systems-level perspective that recognizes ways in which different parts of the landscape interact. In this way it is similar to watershed management, which aims to organize land use in a watershed, an area that drains to a common point, in order to optimize how land and water resources are managed. The challenge is that coordinating the actions of different land users on their private lands, and also on jointly held lands, raises management challenges beyond those that arise on individual landholdings. A recent FFF publication discusses climate-resilient landscapes and the potential role for FFPOs to manage them: *Analyse widely, act deeply: forest and farm producer organizations and the goal of climate-resilient landscapes (IIED, 2019)*.[13]

[12] FAO.2021. Climate-Smart Agriculture. [online] http://www.fao.org/climate-smart-agriculture/knowledge/practices/en/

[13] https://pubs.iied.org/pdfs/13610IIED.pdf

2.2. Climate mitigation practices on the farm

As discussed above in section 1, climate change mitigation refers to steps to reduce the amount of carbon dioxide and other greenhouse gases in the atmosphere, in order to slow the pace of climate change. Farm and forest producers can contribute to capturing carbon dioxide from the atmosphere and reducing its emissions via three main approaches (plus other minor ones): 1) planting and nurturing trees; 2) following agricultural practices that store carbon in the soil; and 3) allocating harvested trees to long-term use. It is important to highlight that many adaptation practices play mitigation roles and vice versa. Therefore, in this section we highlight the mitigation benefits of some practices.

Tree-based carbon conservation

The wood in trees is composed mainly of carbon that is absorbed from the atmosphere during photosynthesis. The longer a tree grows and the larger it becomes, the more carbon it removes from the atmosphere. The more (and larger) trees on a farm, the more they contribute to climate change mitigation.

Growing trees and other perennials can take a number of different forms, whether stands of trees solely intended for timber production or as a mixed-canopy agroforestry system.

Woodlots and tree plantations

Woodlots and tree plantations are two different terms that often refer to the same thing, though sometimes a tree plantation is used to refer to trees planted over a larger area while a woodlot can refer to a smaller area. They are distinct from pre-existing forested areas and involve deliberately planting trees in place of, say, annual agricultural crops or mixed-canopy agroforestry systems (discussed below). They can include monocrops or mixed species; endemic or introduced species. A number of factors affect how much carbon a woodlot or tree plantation captures; these are discussed in more detail in the FFF publication referred to in the previous section.

Agroforestry systems

Agroforestry systems are an accessible option for carbon sequestration and storage in agricultural landscapes. Simultaneously, agroforestry systems provide additional benefits such as product and income diversification, soil and water conservation, as well as the protection of biodiversity.

Agroforestry systems combine agriculture and trees or forests in an integrated manner for more efficient land use. The forest species to be established contribute to carbon capture and storage. The amount of carbon sequestered per unit area by these systems is due to the large amount sequestered in the woody biomass. An important benefit of agroforestry systems in comparison to afforestation projects is

that they do not require radically changing the land use from crops to forests. This opens the opportunity for small farmers to participate and contribute to climate change mitigation and to diversify their production and income. The mitigation potential of agroforestry systems depends on environmental and sociopolitical variables. Agroforestry systems in the tropics capture larger quantities of CO_2 due to soil and weather conditions in comparison with arid regions.

In the case of small farmers, the success of the agroforestry system will depend on the appropriate selection of the forest species to be established and the compatibility with agricultural crops, since many crops reduce their productivity when there is excessive shade. The selection of multipurpose tree species is a good option, since in addition to capturing carbon, the system can generate additional income if the tree species produce fruits, seeds or timber. There are several agroforestry practices and categories (Xu J, Mercado A, He J., Dawson I (eds.), 2013) here.[14]

Small-scale energy plantations

In most rural areas, people depend on forests to meet their energy needs. People still depend on firewood and charcoal as the main resource for cooking and heating and this creates additional pressure on natural forests. In many countries, the extraction of timber for energy purposes is one of the most important drivers of forest degradation and negative impact on carbon pools. For example, in India, almost 70 percent of emission in the forestry sector comes from forest degradation due to wood fuel extraction (Pearson, et al., 2017).[15]

One of the practices in meeting rural energy needs that can contribute to reducing pressure on natural forests, and therefore reducing forest degradation, is the establishment of small-scale energy plantations. This type of tree plantation aims to produce biomass for energy generation by using fast-growing tree species. Biomass is an abundant and renewable energy source and is a low-carbon fuel that absorbs CO_2 in its production and becomes a sink for CO_2. The mitigation potential is even greater if this practice is combined with the introduction of new technologies for improved efficiency in the production of charcoal and improved cooking stoves for a much more efficient use of fuelwood and charcoal.

However, large-scale plantations have received criticisms. In particular, if carried out on too large a scale it could mean converting forest and agricultural lands into forest monocultures, which affects the delivery of environmental services that come from natural forests, reduces biological diversity and threatens the livelihood of forest-dependent people and small farmers whose productive lands might be affected by invasive exotic tree species.

[14] http://www.worldagroforestry.org/downloads/Publications/PDFS/B17460.pdf
[15] https://link.springer.com/content/pdf/10.1186%2Fs13021-017-0072-2.pdf

More information about the potential of forest plantation for wood energy can be found in the Working paper on Plantations and wood energy (FAO, 2001).[16]

Capturing carbon in the soil

Carbon, in the form of organic matter, is an important component of healthy soil. In fact, loss of soil carbon is an important cause of soil degradation. This means that improving the health of soils can also contribute to carbon sequestration by storing more carbon in the soil as opposed to allowing it to dissipate into the atmosphere.

Tillage – plowing the soil as part of land preparation and other agricultural operations – breaks apart soil aggregates and can lead to reduced soil organic matter. As a result, reduced tillage or no-tillage agricultural systems are touted as a way to promote carbon sequestration.

The use of reduced and zero tillage varies around the world. In many places where adoption is high, crop yields actually decline with reduced or zero tillage, but it is profitable nonetheless because not having to plow reduces costs by more than it reduces revenues. This is particularly so in areas with heavy agricultural mechanization, so that not plowing implies saving on fuel costs, and specialized seeding machines facilitate planting even without plowing. In many places where agriculture is not mechanized, the logistical difficulties of seeding without plowing negate the advantages of avoiding having to plow. In general, as with other practices described here, the appropriate approach varies both with geographic and socioeconomic factors.

More details on the potential and practices for soil carbon sequestration can be found on this FAO Soil Carbon Sequestration webpage[17] and in this publication on Soil Organic Carbon (FAO, 2017).[18]

Storing carbon in durable wood products

Carbon is stored in wood not only while it is growing, but also in the form of durable wood products such as housing and furniture. The longer the lifespan of a piece of wood, the longer it avoids breaking down and returning to the atmosphere in the form of CO_2. At the same time, determining how much carbon dioxide is actually saved is complex, because it requires accounting for a number of indirect effects on carbon emissions, such as how much carbon-based energy is consumed in the production process, whether the new product is simply replacing an old one and what happens to the old one, etc. Details about long-term storage of carbon in durable wood products is discussed in more detail in the publication Carbon

[16] http://www.fao.org/3/a-ac125e.pdf
[17] http://www.fao.org/soils-portal/soil-management/soil-carbon-sequestration/en/
[18] http://www.fao.org/3/a-i6937e.pdf

Storage Utilising Timber Products (P. van der Lugt, 2020).[19] This information may be very useful for FFPOs involved in wood processing or active value chains which may store carbon in the products for a long time.

[19] https://www.accoya.com/wp-content/uploads/2013/09/Carbon-Storage-using-Timber-Products.pdf

3. How FFPOs can represent themselves as good partners for climate change finance

Apex FFPOs have an important role to play in demonstrating and advertising the potential that FFPOs have in implementing practical solutions for climate change mitigation and adaptation. They have demonstrated such capability throughout the world, as this section shows. In most countries, those strengths have not yet been applied to climate change and mitigation activities, but the potential to do so clearly exists.

3.1. FFPOs are an essential vehicle for mobilizing small-scale forest and farm producers

More than 1.5 billion smallholders throughout the world depend on forest and farm landscapes to produce food, fuel, wood and non-wood forest products (NWFPs) to meet their subsistence needs and generate cash income (Verdone, 2018 and Mayers *et al.*, 2016). With their direct dependence on the land, they face great risks associated with climate change, making them a critical focal point for climate change adaptation efforts. They also can play a major role in climate change mitigation actions.

If provided with adequate policy support, access to finance and technical capacity, FFPOs constitute efficient vehicles to implement practical actions. They have local understanding of how climate change affects their livelihoods and traditional knowledge that can be harnessed to develop well-adapted practices to address it. FFPOs are the best channel to exchange experiences and knowledge among farmers and producers; they help to create connections and strengthen relationships with government institutions, the private sector, development agencies and civil-society organizations. They also are well positioned for delivering capacity-building services to their members to adapt to climate change (FAO, 2017).[20] In the cases where an enabling environment exists, FFPOs have made enormous contributions and achievements.

One of the main strengths of producer organizations is their ability to mobilize their members to work collectively. Strong local norms, practices and rules among producer organizations and their members help to build social cohesion and allow FFPOs to create bonds and incentives for internal cooperation. This is fundamental to build trust among peers and facilitate the exchange of experiences with other organizations in neighboring communities. The exchange of successful local experiences in the management of natural resources, sustainable food production, family farming, etc., is an important vehicle for scaling practices and achieving ambitious goals at the landscape level.

[20] http://www.fao.org/3/a-i7404e.pdf

"In Nepal, the Federation of Community Forestry Users Nepal (FECOFUN) emerged in 1995 as a national umbrella organization of community forest user groups (CFUGs) in the wake of decentralization of forest management in Nepal. Its mission is to defend the CFUGs' forest rights and to build their technical capacities. FECOFUN is now the largest civil society group in the country, representing over 18 000 CFUGs, which together manage more than 1.7 million hectares for the benefit of 2.2 million households (Pathak, Parajuli and Pandey, 2015). The success of FECOFUN has been partly attributed to the political activism of its founding leaders, who strategically linked the forest rights movement to wider citizens' movements. As a result, the relationship between forest communities and state forest agencies has become more egalitarian and horizontal. FECOFUN has been able to exert considerable pressure on the Nepal Government in policymaking on climate change and REDD+, including carbon ownership (Paudel *et al*., 2013). The federation has earned a seat on national forest and climate policy committees" (FAO, 2017, p. 12).
Source: http://www.fao.org/3/a-i7404e.pdf

Climate change finance authorities need FFPOs as partners to execute their programmes. It is not feasible for large climate change funding organizations to work directly with local-level actors. It would be too difficult and costly for them to determine or keep track of the individual actions or individual FFPO members, and to find them and transfer funds to them directly. Working with apex FFPOs can serve as their intermediary to local FFPOs and in turn to local forest and farm producers. The apex FFPO can provide assurance to programme authorities that local FFPOs deliver the agreed-upon climate change mitigation and adaptation activities.

"The Zambia National Farmers' Union (ZNFU) recognized the high rate of deforestation caused by agricultural expansion in Zambia. It also recognized the urgent need to reorient agriculture towards green climate-smart farming practices that would add value to the agricultural sector and enhance its environmental sustainability. ZNFU began to promote growing trees on farms to generate income and provided farmers with improved tree seedlings from two nurseries that were established in Chisamba and Choma. As a farmer organization, ZNFU set up a Forest Commodity Committee in 2014 to lead the process of greening agriculture. These experiences draw attention to the national policy environment, which may either enable agricultural producer organizations to engage in the forest sector or limit their role to sectoral silos. The capacity of key staff is essential in determining whether forestry is taken onto the mainstream agenda of the organization" (FAO, 2017, p. 8).
Source: http://www.fao.org/3/a-i7404e.pdf

3.2. Meeting climate change mitigation commitments requires moving beyond public lands

According to FAO (2014), forests cover 31 percent of the world's land surface (about 4 billion hectares). Of this area, 76 percent is state-owned, 11 percent is in the hands of individual owners, 14 percent is owned by a combination of community and individual ownership, and only 3 percnet is entirely owned by communities (FAO, 2018a). Other studies indicate that the area of forests under Indigenous peoples' control and/or claimed by local communities may be significantly higher (White and Martin, 2002; Rights and Resources Initiative, 2015). The importance of forests is such that a review of documents related to NDCs, NAPs

and NAPAs found that at least 120 countries mentioned forestry in their submissions to the UNFCCC (FAO, 2018b). That importance is related to the fact that roughly 820 million rural people in the tropics live in or near forest and agricultural landscapes, where an average of 40 percent are poor.

Securing smallholders, local communities and Indigenous peoples' land rights is the pathway for governments to meet their international agreements. Although 76 percent of the world's forested area is in the hands of states, much of it is managed under community/customary systems. Several studies present evidence that areas managed by local groups present lower deforestation rates, lower incidence of forest fires, higher tree basal area and tree stem density, etc., in comparison with state-owned forests and another type of tenure (Bowler *et al*., 2010; Pagdee *et al*., 2006; Porter-Bolland *et al*., 2012). This evidence suggests that it is not realistic to think that governments can meet national commitments without the participation of local stakeholders such as smallholders, communities and Indigenous groups. In many countries in Africa the ambitious targets for tree planting as part of the AFR-100 restoration agenda[21] can only be met by considering land managed by farmers and pastoralists outside of government gazette forests.

> "An association of Tanzanian smallholders are growing trees and diversifying their farm enterprises. The farmers should benefit from the growing demand for timber, and their incomes are already rising. National policy is encouraging small producers to plant trees and the Ministry of Natural Resources and Tourism promotes groups such as the Matembwe Tree Growers Association (UWAMIMA), which was formed in 2009 and now has 75 members. The association has received funding for tree planting and income-generating activities from development partners, and it won a tender for the production of 81 000 seedlings for the Private Forestry Programme. Most of the young trees were distributed to members; the rest were sold for a total of TSHS 2 million (just under EUR 800) to support UWAMIMA's operations. UWAMIMA acquired land already stocked with *Eucalyptus grandis* as a demonstration plot for silviculture and beekeeping. There is also a communal plot where individual members have their own parcels of land" (FAO & AGRICORD, 2016, p. 6-7).
>
> *Source: http://www.fao.org/3/a-i5765e.pdf*

The potential role of community forests and Indigenous lands in climate change mitigation

As mentioned earlier, community and Indigenous lands have tremendous cost-effective potential for both mitigation and adaptation to climate change. Some estimates suggest that 60 million forest-dependent Indigenous people live in the tropical forests of Latin America, West Africa and Southeast Asia. Furthermore, data suggest that an additional 400 to 500 million people depend directly on forest resources for their livelihoods in these regions (White and Martin, 2002). FAO (Gilmour, 2016)[22] reports that Africa has 24.03 million hectares (6.1 percent) under

[21] https://afr100.org
[22] http://www.fao.org/3/a-i5415e.pdf

A case study published by the World Resources Institute (WRI, 2016) shows that the estimated costs of carbon mitigation through Indigenous forestland tenure-security programmes in Bolivia, Brazil, and Colombia range from USD 2.04–3.66/tCO_2, USD 8.74–11.88/tCO_2, and USD 4.75–7.26/tCO_2, respectively. Those costs are lower than the average costs of avoided CO_2 from carbon capture and storage estimated in USD 58/tCO_2 for coal-fired power plants and USD 85/tCO_2 for natural gas-fired power plants. The same study estimates that the tenure-secure Indigenous forestlands provide significant global carbon benefits amounting to USD 21–30 billion, through the avoided annual release of 42.8–59.7Mt CO_2 emissions.

community-based regimes, Asia and the Pacific region have 184.87 million hectares (34 percent), and Latin American has 272.0 million hectares (32.3 percent).

Ensuring the rights and access of local communities and Indigenous peoples to forests brings several benefits. Not only does it present the opportunity for cost-effective carbon mitigation through reduced deforestation and other land-use change, but it also can help achieve adaptation targets such as generating income and securing livelihoods for those millions of people who rely on forest resources.

One example of the benefits for both mitigation and adaptation outcomes in community-based forest management is the case of the Forest Concessions in the Mayan Biosphere Reserve in Guatemala (MBR). The reserve, which covers over 2 million hectares and is divided into the core zone (36 percent of the MBR), buffer zone (24 percent of the MBR) and multiple use zone (40 percent), was established in 1990 to conserve and promote sustainable use of natural and cultural resources in the largest remaining forest and important vestiges of the ancient Maya civilization. The government with the support of civil society groups and international cooperation prioritized the granting of forest concessions to organized community groups that had historically inhabited or extracted resources from the area (Radachowsky *et al*., 2012).

Recently, reports estimate that the deforestation rate in the MBR is about 1.18 percent annually. Although most of the deforestation occurs in the buffer zone (35 percent deforested since 1986), this has also increased in national parks and in some parts of the multiple-use zone. In contrast, the average deforestation rate in the 14 concessions was 0.45 percent annually between 2001 and 2009. The deforestation rate drops to only 0.008 percent if excluding four concessions with recent immigrants. In terms of socioeconomic benefits, aggregate annual revenue is estimated to be more than USD 13 million from certified timber. Harvest and management activities for timber and NWFPs generate more than 3 000 jobs annually with an average annual income per concession member of USD 1 140. The revenue generated by NWFP extraction is also substantial with an estimate of USD 5.7 million annually just from *xate* (*Chamaedorea* spp.) whose leaves are commonly used in floral arrangements (Radachowsky *et al.,* 2012).

In order for FFPOs to effectively make the argument about the importance of their forests, trees and agroforestry systems they need good data on the size of their "footprint" on the landscape – that is, the relative proportion of area where they can show positive climate change benefits. They also need to have inventory data on the size of forest patches they are responsible for, the number and quantity, age and species of their trees and agroforestry systems. Relatively simple programmes

exist to convert these numbers to the carbon related data needed to argue for funding. An example is FAO's EX-Ante Carbon balance Tool (EX-ACT),[23] which provides estimates of forestry and agricultural investment projects on the carbon balance. FFPOs can gather their land-use information and then use EX-ACT to estimate the carbon impacts of current land-use patterns or alternative land uses under consideration.

3.3. Possible roles of FFPOs in distributing climate change mitigation funds

The Agriculture, Forestry and Other Land Use (AFLOU) sector dominates many developing country economies and is responsible for 24 percent of global GHG emissions, due to land-use change for agriculture and livestock and timber extraction for fuelwood and charcoal consumption. To stop and reverse this trend, governments and the international community have promoted sustainable forest management, afforestation, climate-smart agriculture, landscape restoration, and other strategies. One important element of these strategies is to deliver not only mitigation benefits but also to provide additional benefits such as income generation and ensure the livelihood of local populations.

Nevertheless, the successful implementation of mitigation strategies cannot be achieved without active participation of local stakeholders. There are examples that demonstrate the importance of local actors for the fulfillment of national mitigation goals. In fact, many communities have been making enormous efforts to conserve natural resources that have resulted in emission reduction benefits. These cases show that local FFPOs and communities are strategic partners for governments in achieving mitigation targets.

Apex FFPOs can contribute in a number of specific areas related to climate change mitigation actions. They can help in organizing and providing training services to local FFPOs, participate in the decentralized implementation of climate finance and deliver valuable outcomes in results-based payments for REDD+ activities, payment of ecosystem services and climate-smart agriculture. Well-organized FFPOs can provide technical support for landscape restoration actions, and they can lead Nationally Appropriate Mitigation Actions (NAMAs) in different sectors. FFPOs and communities also can help in the monitoring, reporting and verification (MRV) process at the landscape level.

3.4. Government support can make FFPOs better partners for climate change finance

Smallholders and FFPOs, as shown in previous sections, have achieved enormous successes and they have the potential to achieve more ambitious climate change

[23] http://www.fao.org/tc/exact/ex-act-home/en/

and Sustainable Development Goals (SDGs) outcomes. Nevertheless, FFPOs and communities still have many obstacles and challenges that limit their potential. From the governmental side, smallholders, local communities and producer organizations are still struggling with tenure insecurity-related issues; lack of direct support to develop capacities and organizational skills; lack of financial resources and incentives; and in many cases they are marginalized in policy development consultations (FAO, 2014).[24] Furthermore, FFPOs and communities face competing

Community-driven project benefits in Madagascar

The Makira Natural Park REDD Project (Makira Project) is a collaborative effort between the Madagascar Ministry of Environment, Ecology and Forests and the Wildlife Conservation Society (WCS). The park covers 372 000 hectares and has operated under protected area status since 2012. It is closely managed with local communities. The project supported the organization of community associations and the government arranged administrative contracts with them to manage "conservation belts" around the park to avoid deforestation risks.

The success of the project is not only to conserve the forest ecosystems but also support sustainable livelihood practices that improve the welfare of households. One important factor of the success is the benefit sharing of carbon revenues that go to community associations through a national trust fund. The local association receives 50 percent of the carbon revenues from avoided deforestation and they distribute those resources to finance operations costs of ecological monitoring and surveillance against illegal hunting and logging. Furthermore, the local associations develop management plans to prioritize local needs to be funded such as projects for agricultural irrigation, training on crop diversification and installation of renewable energy.

The result of this strong collaboration among government, communities and WCS has impacted positively in the access of economic benefits and in the reduction of deforestation and hunting, and the restoration of degraded lands. Additionally, the project has delivered additional benefits such as building schools and hospitals and providing mobile health clinics and agricultural training to participants and isolated communities.
Source: https://verra.org/wp-content/uploads/2018/03/Verra-REDD-Case-Study-Ensuring-Community-Benefits-1.pdf

[24] http://www.fao.org/3/a-h0038e.pdf

land uses that involve agriculture, infrastructure development mega-project expansions and exclusionary approaches to nature conservation (FAO, 2017).[25] Another area where FFPOs can benefit from technical support is in establishing clear metrics on what adaptation and restoration measures are being undertaken and what extent of area they cover. FFPOs need such tools in order to be able to credibly claim to authorities that they are undertaking them.

However, in cases where FFPOs are articulated in strong apex organizations and enjoy adequate policy support from governments, FFPOs can become fundamental partners to implement climate change finance, scale up successful mitigation practices and achieve transformational changes in key productive sectors.

The Nationally Appropriate Mitigation Action (NAMA) in the coffee sector in Costa Rica

The NAMA Café is the first agricultural NAMA in the world. It is a collaborative effort among the public, private, financial and academic sectors that aims at reducing GHG emissions and improving efficiency in the coffee sector that started in 2011. One of the most important players of this process is the Costa Rican Coffee Institute (ICAFE) integrated by coffee producers, mills and exporters. Among the total coffee producers, 92 percent are small farmers that own less than five hectares and, together, represent 44 percent of the total national producing area.

With the active participation of farmers and producer organizations and strong support from the government, the NAMA Café expects to achieve 93 000 ha of coffee under competitive organic farming, reducing the risk of imminent abandonment of coffee plantations that would generate land-use change. The NAMA is helping to keep the level of employment high (up to 150 000 workers at harvest time) and strengthen economic activity in the sector, which represents 9.2 percent of national exports and has a significant impact on living conditions of over 400 000 people. In environmental terms, the NAMA is contributing to improve the adaptation of the coffee sector to climate change through the efficient use of energy in coffee mills, implementation of soil and biodiversity conservation practices, wastewater management and a reduction in the use of fertilizers. Additionally, coffee farmers are introducing shade trees for carbon sequestration, reduction of soil erosion and income diversification. Overall, before the completion of the NAMA Café in 2019, the coffee sector had reduced emissions by 60 000 metric tons CO_2 equivalents per year.

Source: https://www.namacafe.org/es/impactos
http://stories.nama-facility.org/costa-rica-low-carbon-coffee/2/

[25] http://www.fao.org/3/a-i7404e.pdf

4. Challenges for Apex FFPOs in managing climate-change finance

As apex FFPOs consider the steps they need to take to access climate change finance, important issues arise about the need to be prepared for the financial management this will entail. This section addresses two main points in this regard:

- the need for local FFPOs to have a well-developed and transparent financial management and accounting system, and the dangers of allocating funds to local FFPOs that do not have such a system in place; and
- the potential pressure that apex FFPOs might face in distributing funds to local FFPOs that are not prepared to manage them successfully.

4.1. Local FFPOs must develop strong arrangements for managing funds

As local FFPOs begin to become more business-oriented, they will face new situations that require new, better-developed arrangements for managing funds. This challenge and approaches to address it are discussed in FFF's Access to Finance report (FAO, 2018).[26] Such concerns are centrally relevant as apex FFPOs try to access climate finance on behalf of their local member FFPOs.

In particular, managing funds as a group will be very different from managing funds as individual operators. In addition to having to keep track of overall expenses and revenues, they will need to develop arrangements for determining what each member is required to commit towards meeting the FFPO's investment costs. They also may need an accounting system that distinguishes between invested funds that belong to the FFPO as a whole vs. funds that belong to individual members. They will need to devise arrangements for distributing any returns that come to the FFPO, and for distinguishing between revenues that should go to the FFPO as a whole as opposed to revenues that should go to individuals. They will need arrangements to decide to what extent FFPO revenues should be distributed to individual members as opposed to being reinvested on behalf of the entire FFPO, or whether revenues will be shared on the basis of effort or divided up evenly.

Most of all, they will need a well-functioning, transparent accounting system that makes these things very clear. Transparency requires a system that allows all FFPO members to be able to see the accounts and understand what is happening. Most likely it will require that multiple members of the FFPO, not just one, are responsible for managing the accounts, and that others are trained in how accounts management works even if they do not participate in it. This will spread transparency and increase confidence in sound management.

[26] http://www.fao.org/3/CA2609EN/ca2609en.pdf

In contrast, for an FFPO that is just getting established, poor financial management can destroy everything it is trying to do. This is because every aspect of strengthening an FFPO requires trust among the members. Anything that undermines trust, such as suspicion about whether finances are managed correctly, can bring to a halt the successful development of an FFPO.

FFPOs without transparent accounting systems risk disputes and discord

In Mexico, many forests are owned and managed by *ejidos*, communal land management groups. Many of them own cooperative wood products businesses and can be considered a form of FFPO. Many of them have well-established systems for determining individual and collective responsibilities related to investing in the wood products business and benefitting from its revenues, backed by a strong, transparent accounting system. However, some ejidos have been less successful in developing such arrangements, in some cases because their rights to manage their own forests were interrupted by the government for many decades, preventing them from developing commercial operations and the accompanying financial management arrangements. In one such case, in recent years the government returned the forest rights to the ejido and encouraged it to develop its own management systems. The ejido was successful in attracting funds from a government forest management project. The ejido members were rather divided politically, with leadership not necessarily enjoying the trust and support of all the members. Financial accounting was not completely transparent from the perspective of people who did not support the leadership. The government programme required that the community undertake certain forest restoration investments and take steps to prevent deforestation. Funds from the programme were directed to the ejido's leadership, which had the responsibility both to ensure that obligations to the project were met and to distribute financial benefits from the project. Those opposed to the ejido's leadership complained that they did not know how the project funds were distributed, and they threatened to undermine efforts to prevent deforestation. The leadership insisted that the project management was sound and fair, but without a transparent accounting system they could not prove it to all the members. Whether the system was honest or corrupt is impossible to know. What is clear, however, is that in this case, accessing external funding increased discord and reduced the stability of a nascent FFPO-based business operation.

What can apex FFPOs do to be sure that all recipients of climate funds are well prepared?

As the logical vehicle for FFPOs to access climate change finance, apex FFPOs will also have a great deal of responsibility for determining which local FFPOs are eligible to receive the funds, and for assuring that they actually use the funds as intended, in a way that improves climate change mitigation and/or adaptation.

There are a few steps that apex FFPOs can take to ensure that all local FFPOs that receive climate change funding are prepared to manage it properly, meeting the objectives of the funding and avoiding conflict among the members.

One step is to identify whether a local FFPO has developed adequate procedures for managing external funds, including clear rules and procedures for members to follow, clearly established responsibilities and rights for each member, and a clear accounting system that is widely understood among the membership. Apex FFPOs can develop their own sets of indicators or benchmarks for whether such factors

are in place, and they should apply them well in advance of a specific decision regarding which FFPOs will receive funding.

4.2. Apex FFPOs may face pressure to distribute funds quickly

In any given country, if an apex FFPO is able to attract global climate funding, the sum of money is likely to be quite large relative to what they are accustomed to attracting and managing, and they may face pressure to distribute it more quickly than they would like to. This scenario is the likely outcome of a combination of the need to minimize transaction costs and the need to manage bureaucratic pressures.

As discussed above, transaction costs for a donor agency are the costs of agreeing and executing each grant or contract. Transaction costs will be lower if the donor agency makes a relatively small number of relatively large grants as opposed to the opposite. This means that, on balance, a donor agency will more easily meet its objectives of distributing a given sum of money through larger grants or contracts rather than smaller. It means that an apex-level FFPO that succeeds in securing access to climate change funds may find itself with the task of distributing a very large sum of money to a large number of FFPOs that need to be prepared to successfully manage the funds and execute the work.

Bureaucratic realities are such that the apex FFPO risks facing pressure to distribute funds more rapidly than it would like to given how many local FFPOs are truly ready to manage them. Such pressure can arise because once a donor organization decides on a path for allocating its funds, its immediate objective is to make sure that the entire allocation for each year is expended as planned. Donor agency officials are required to make sure that donated funds are actually donated and spent; otherwise they are not doing their job. The same is true for national organizations responsible for attracting funds from international donors. Once a project is in place, they are responsible for making sure that all the funds are actually allocated. In other words, often it is in the interest of all concerned parties – the international donor, the national representative's office, and the ultimate recipient – to push the money through quickly.

The combination of large projects and pressure to execute them can lead to a paradoxical situation. When applying for funds the challenge is to demonstrate that all the necessary procedures and capacity are in place to manage the project in question. On the other hand, once funding is actually in place, the situation may reverse, as it becomes imperative to distribute funds even if all the necessary arrangements are not in place. Even though there is a desire and an effort to design effective projects, adhering to all the intended guidelines may be difficult due to bureaucratic pressures to distribute all funds on schedule.

The risk for an apex FFPO that succeeds in attracting global climate funding is clear: the pressure to distribute funds to local FFPOs even if they have not yet developed the capacity to absorb funds and execute the required activities.

It is worth emphasizing that if an apex FFPO were to find itself in this situation, it would not only risk failing to deliver on its promise to execute a project for climate change mitigation or adaptation as promised. As discussed above, distributing funds to a local FFPO that is not ready to manage them risks undermining the development of those FFPOs by potentially triggering disputes and distrust created by the inability to manage funds effectively. *It risks undermining all of the local FFPO's objectives, not just those pertaining to global climate change.*

Moving funds too quickly in a large watershed management project in India

In the 1990s in India, an externally funded project for improved watershed management had a budget of close to USD 100 million to be spent in a relatively small portion of the country. The project called for funds for expenditures in the field – mainly employing local people for manual labour – to be managed by village-level watershed management committees. Given the huge budget and the pressure to spend all of it within the project period, the project's initial task was to establish village-level committees for the purpose of being eligible to accept the project funds. There was no arrangement for helping the village-level committees build their capacity to be able to manage the funds, or for village-level deliberation to decide whether and under what arrangements to accept and manage the funds. Not surprisingly, once the project had ended it was difficult to find evidence of continued management of the watershed in most of the villages. One project official estimated that the project's activities continued successfully in fewer than ten percent of the villages, and that those villages were the ones with a strong, pre-existing capacity to work together and manage funds collectively. One of the lessons learned from this and related projects was to include time for capacity-building in subsequent projects. In the new version, villages spent around 18 months establishing systems for making and executing decisions, and for managing funds transparently.

How can an apex FFPO try to access an optimal amount of funding for climate change mitigation or adaptation?

To address this potential problem requires that apex FFPOs consciously try to avoid accepting more funding than they know they can process. This is a balancing act, because in order to convince the donors they are the right partner, they might need to show they can absorb a great deal of funding. In addition, even if they know that what a climate change funding organization offers is more than they can realistically distribute in an effective way, turning down the funds would be difficult, most likely going against bureaucratic and political pressures, not to mention human nature.

One possibility is for apex FFPOs to try to access global climate change funds as part of a coalition as opposed to on their own. For example, a climate change adaptation project could involve the work of smallholder forest and farm producers only as one component of the overall work plan. The overall project might still have

a huge budget that satisfies the donor's need to minimize transaction costs, but the portion allocated to FFPOs could be more manageable.

In addition, in some of the examples presented in the appendix, a large global climate change adaptation project operates in several countries within a region, not just one. If funds in a large project were allocated entirely to FFPOs but across several countries, the budget that an apex FFPO in a given country must distribute would be more manageable.

Another possibility is to try to align not with the national authorities that are the official liaison with global climate change funds, but with the agents that tend to serve as their main implementing partners, for example organizations such as Conservation International (CI) or the International Union for Conservation of Nature (IUCN). Such implementing partners may be in control of very large amounts of money but be looking for effective ways to allocate smaller portions of that money to help achieve objectives of climate change mitigation and resilience.

None of these approaches is likely to emerge overnight. All of them can only be pursued if apex FFPOs are able to gradually develop a relationship with the national authority that is the liaison with the global climate change funds.

5. Steps for FFPOs to take to connect to climate change finance

In previous sections, we described the importance that FFPOs have in the implementation of both climate change adaptation and mitigation practices and the fundamental roles they have to meet national commitments at the UNFCCC. We have also identified potential challenges that FFPOs might encounter in their attempt to access climate finance, some of them related to administrative capacities and lack of knowledge on the climate finance structure. However, there are several examples where FFPOs have successfully engaged in climate change plans and strategies and this has brought them the opportunity to access climate finance. Hence, in this section, we present some of the actions that FFPOs can make to increase their opportunities to connect to climate finance programmes.

The **first** step is to understand the climate risks and necessary responses for FFPO members. What kinds of climate adaptation measures do they need to undertake, and what assistance will be needed for them to do so?

The **second** step is that apex FFPOs, to make their case as strong potential partners, must be able to collect and provide detailed information about their members and what they have to offer. This is an important step for accessing climate finance but also for accessing other opportunities, more generally. How many local FFPOs do they represent, with how many members? How much area do those FFPOs have under management, with how many trees? This data provides information on the scale – numbers of people, area, trees – of any possible adaptation and mitigation options.

Third, what are some notable achievements that apex FFPOs can point to as a way of demonstrating the capacity of their member FFPOs?

A **fourth** step for apex FFPOs is to broker meetings to discuss potential for partnership with in-country agencies, and explore pilot interventions to build trust and capacity. These are essential first steps for developing networking and alliances that allow apex FFPOs to have access to projects and initiatives implemented and led through governments or through a national liaison office. To prepare for this step, however, there are several additional things for apex FFPOs to consider.

Generally speaking, having knowledge on how climate finance works and the existing national regulatory framework is fundamental for active participation and access to climate finance. Small farmers, FFPOs and local groups often find many problems in understanding how these agreements are structured and the different national strategies funded, and this constitutes a very strong barrier for them. Apex FFPOs, on the other hand, can unlock the information, establish a stronger voice, and gain a seat in the planning, designing and implementation processes of projects

funded by climate initiatives. This is the best strategy to cope with the uneven playing field in the way that global climate finance is allocated.

The majority of climate finance is oriented to operationalize country plans and strategies. Part of the success of accessing climate finance depends on the linkages and engagement with projects and initiatives that contribute to the scope of a country's commitments. This means that for apex FFPOs to help their member FFPOs access climate finance, they have to develop a good understanding of their country's climate change finance institutional arrangements so that they know who are the relevant government authorities with which to establish channels of communication. Working in isolation means having fewer options for accessing these resources, and possibly closing off the options altogether. As a beginning step, an apex FFPO can coordinate with organizations that already have a good understanding of how the climate finance system works.

Apex FFPOs should take advantage of the processes designed for consultation and participation in the way that global climate finance is organized. Most donors have established certain social and environmental safeguards and consultation processes to local groups and stakeholders around projects funded by climate finance initiatives. In the case of the REDD+, information and consultation processes with different stakeholders (local communities, Indigenous people, small farmers, FFPOs)[27] are required. The GEF[28] and GCF[29] have developed guidelines and principles for engagement with local groups and Indigenous peoples as well as a set of environmental and social safeguards. Some donors such as the Climate Investment Funds (CIF) have created the Dedicated Grant Mechanism (DGM)[30] to support sustainable forest-use practices led by Indigenous peoples and local communities. However, there are cases where consultation processes do not reach the intended targets due to a lack of prior information and limited knowledge on the topics of consultation. Apex FFPOs can be proactive to help ensure that the they are part of the consultation process.

Countries have also established participatory processes and organized working groups with multiple stakeholders while designing different planning tools for the fulfillment of commitments within the UNFCCC. During this stage, stakeholders identified the most vulnerable sectors that must be addressed in the adaptation plans and those that have the greatest potential for GHG reduction. They have also prioritized geographical areas that should be attended to. However, it is clear that those processes have not been participative for certain groups, who have not been represented and whose needs are not addressed. This usually happens with small farmers and unorganized FFPOs due to their lack of knowledge and capacities around climate change related-issues. Apex FFPOs should help small farmers work to ensure that they are part of this process.

[27] https://www.forestcarbonpartnership.org/common-approach-environmental-and-social-safeguards
[28] https://www.thegef.org/topics/indigenous-peoples
[29] https://www.greenclimate.fund/safeguards/environment-social
[30] https://www.climateinvestmentfunds.org/dedicated-grant-mechanism

It is also important to highlight that access to these resources is also complicated for the countries themselves. Some of the most common limitations that donors find are the low level of capacity to design and develop projects and programmes; lack of coherent policies and regulatory frameworks; unclear priorities, lack of transparency and unclear multi-stakeholder participatory processes; and limited availability of and access to climate information, among others (OECD, 2015). In addition, several voices have raised the concern that socialization and consultation processes have been poorly implemented, and they have pointed out the lack of inclusion and active participation in projects funded by climate finance. In many cases, Indigenous and local community networks have filed complaints and grievances with donors.

Apex FPOs can help to identify the different climate financing sources, both multilateral and bilateral, available at the national level. An important step for them is to know the financial options and opportunities available in their respective countries, the thematic areas and operational guidelines to access and the current projects that are receiving financial support. This will provide an overall picture of the country's climate finance architecture, identifying financial options and the requirements for project submissions. Knowing and understanding what is taking place in the territories allows FFPOs to engage in active and effective participation in decision-making processes and benefit sharing.

Finally, apex FFPOs should take into account that it is not only about having access to money, but knowing what kind of commitments the governments and partners are making and to what extent these commitments will affect (positively or negatively) their livelihoods, rights over lands and access to natural resources. Certain commitments and regulations made in exchange for funds from governments and external donors might result in conflicts with traditional/customary practices, incentives for internal collaboration and access to lands and forests.

Once an apex FFPO is able to establish connections and communication with national climate change finance authorities, two other steps remain: A **fifth** step is to identify the financial management capabilities of member FFPOs in advance of trying to direct funds to them. This is essential both for being able to deliver on any promises to sources of climate change finance, and also for successful nurturing of nascent FFPOs. Directing finance to them if they are not preprared to manage it on behalf of their members could be disastrous for their development.

A sixth step is to establish robust monitoring and feedback mechanisms to track progress in adaptation and mitigation efforts. These steps, which will likely require technical assistance to implement, will be important for demonstrating both achievements and compliance in any programme that the apex FFPO is able to gain access to.

6. Appendix: Summary of multilateral and bilateral climate change finance programmes

This section summarizes several global climate change funding programmes that could in principle be accessible to FFPOs. Their missions are to support climate change adaptation and/or mitigation as introduced in section 1. One of their roles is to help FFPs adopt the kinds of land-use practices described in section 2.

The multilateral climate change funding programmes summarized in this section include the following:

- REDD+
- Green Climate Fund
- Global Environment Facility
- Adaptation Fund
- Climate Investment Funds (including the Forest Investment Programme [FIP] and the Private Sector Set-Aside [PSSA])
- Dedicated Grant Mechanism for Indigenous Peoples and Local Communities (DGM) (part of FIP)
- NAMA Facility

Bilateral funds summarized below include the following:

- Global Climate Change Alliance Plus (GCCA+) Initiative
- International Climate Finance (ICF)
- International Climate Initiative (IKI)
- Norway's International Climate and Forest Initiative (NICFI)

All of these programmes share the characteristic of being coordinated by a national office that serves as the liaison with the international fund managers. This means that accessing any of the specific funds requires establishing a relationship with the national office.

At the end of this section, two conceptual frameworks are presented showing the structure of global climate change finance. One focuses on multilateral funding sources and the other focuses on bilateral funding sources.

6.1. Multilateral funding sources

Reducing Emissions from Deforestation and Forest Degradation (REDD+)[31]

REDD+ is the flagship programme under the UNFCCC for climate change mitigation derived from protecting the world's forests. The implicit logic of REDD+ funding is that if wealthier, more industrialized countries provide funding for forest protection

[31] https://www.un-redd.org

and management in less wealthy countries, all countries will benefit from protection against climate change. For developing countries with a lot of forest cover and relatively little fossil fuel consumption, protecting their forest cover is the greatest contribution they can make towards limiting the extent of future global climate change.

Receiving REDD+ funds entails a contractual obligation to perform the specific land-use practices agreed to, for the duration of time agreed to. Land managers who do not fully understand the terms of the agreement can find themselves stuck for several years in an arrangement they are not happy with.

The official name of REDD+ is "Reducing emissions from deforestation and forest degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries." The "+" in REDD+ refers to sustainable management and enhancement of carbon stocks, whereas originally REDD (without the "+") referred only to reducing deforestation and forest degradation.

All REDD+ funds go through the national government, coordinated by a central body. Any effort to obtain funds through REDD+ requires establishing a relationship with that central coordinating body and trying to make the case for developing REDD+ plans that involve FFPOs.

REDD+ is also complicated because it contains many different facets, too many to discuss here.

Useful documents

Forest Carbon Partnership[32]

Green Climate Fund (GCF)[33]

Established as a global fund in 2010, the Green Climate Fund (GCF) serves the UNFCCC in support of international climate change agreements. It aims to help developing countries limit or reduce their greenhouse gas emissions and adapt to climate change, with an intention to deliver funds equally to mitigation and adaptation. It has obtained funding commitments of USD 4.6 billion to date, with another USD 10 billion committed. As such, it is perhaps the largest source of climate funding. Its headquarters is located in South Korea, with funding from sources all over the world.

GCF projects cover a range of sectors, but the emphasis on climate change adaptation means that many projects are in the farm and forestry sector. Some projects operate at the country level and others cover multiple countries, with coordination by a regional development bank.

[32] https://www.forestcarbonpartnership.org/knowledge-and-resources

[33] https://www.greenclimate.fund/home

A USD 28-million project funded by GCF helps small farmers in six countries in Central America and the Caribbean adapt to climate change in production of crops, livestock and trees. Its main focus is to increase small farmers' access to credit for climate adaptation investments. A project worth more than USD 2 billion helps farmers in nine countries in the Niger River Basin in Africa adapt to climate change, with a major investment in infrastructure accounting for most of the cost. Similarly, a USD 140-million project in Cambodia, coordinated by four different government ministries, invests in infrastructure such as irrigation to help farmers adapt to climate change.

The GCF aims to help transform their economies to have a smaller impact on climate and to be able to withstand the negative effects of climate change. It intends to use public investment as a way to stimulate private finance. It has provisions to allocate funds directly to the private sector, in coordination with national governments.

The GCF is designed so that projects contribute directly to countries' national plans for climate change mitigation and adaptation. Accordingly, each country has a Nationally Designated Authority (NDA) that project applications go through. This means that FFPOs can only access GCF funds if they are able to work closely with the NDA and demonstrate that they can be an important vehicle for project implementation.

In Namibia, the Empower to Adapt project focuses on creating climate-resilient livelihoods through community-based natural resource management. Initiated in 2016, this USD 10 million project operates through a network of eight NGOs and the University of Namibia, coordinated through the Environment Investment Fund of Namibia, a government body. This project takes advantage of an existing institutional structure in Namibia that supports community-based natural resource management (CBNRM). Through the network of NGOs, it seeks to further strengthen CBNRM through awareness raising, capacity building and assistance with developing and implementing local-level climate investment plans. A second component of this project makes small grants available to local communities for investment in three areas: 1) adoption of climate-resilient agricultural practices; 2) construction of climate-resilient infrastructure where it is needed to reduce people's vulnerability to climate change; and 3) ecosystem-based adaptation, which refers to landscape-level changes in management systems covering forestry, wildlife management, and restoration of degraded wetlands, among other things. A detailed description of this project is available below.

Useful documents

GCF 101: Comprehensive guide on how to access the green climate fund[34]

[34] https://www.greenclimate.fund/gcf101

Global Environment Facility (GEF)[35]

GEF is a very large international fund that was established in 1992 after the Rio de Janeiro Earth Summit. Unlike the other funds described in this document, climate change mitigation and adaptation are only small parts of the overall portfolio of GEF's work, which focuses on various aspects of biodiversity conservation and sustainable natural resource management. Over the years it has provided about USD 18 billion in grants and mobilized an additional USD 93 billion in co-funding. Under the GEF, two funding avenues related to climate change are the Special Climate Change Fund (SCCF) and the Least Developed Countries Fund (LDCF), both established in 2001 in support of UNFCCC objectives.

The Special Climate Change Fund (SCCF)[36] is available to all developing countries to address vulnerability to climate change. It has allocated about USD 350 million to date. Projects tend to be implemented by the World Bank (WB), the regional development banks (Inter-American Development Bank [IADB], African Development Bank [AfDB] and Asian Development Bank [ADB]), and United Nations agencies such as the United Nations Development Programme (UNDP) and the United Nations Environment Programme (UNEP). The GEF stresses that SCCF grants are extremely competitive, with proposals each year far outstripping the available funds.

> Forestry and agriculture are among the several sectors available for SCCF funding. SCCF has three main objectives: 1) technology transfer for climate adaptation; 2) mainstreaming adaptation for systemic impact; and 3) fostering enabling conditions for effective and integrated adaptation. For example, in Ecuador, Peru and Bolivia, SCCF supports a project to help farmers and municipalities that depend on water from receding glaciers to adapt and update their management systems in preparation for when their current water source disappears. This project includes USD 8.8 million from SCCF, with additional co-financing of USD 25.5 million. In Zimbabwe, a project aims to help farmers to adapt as climate change brings warmer weather and rainfall that may become higher in volume but with uneven distribution. Soil conditions in most of the country mean that moisture holding is poor and runoff is high, making agriculture vulnerable to the frequent dry spells that are expected to continue to occur. As a result, an SCCF-funded project aims to help farmers increase their knowledge of adaptation practices and to develop early warning systems that can help them plan better. Specific assistance has focused on crop diversification, water harvesting and promotion of drought-resistant crops, among other things.

The Least Developed Countries Fund (LDCF)[37] works with the poorest countries that are most vulnerable to climate change. To date it has approved over USD 1.1 billion. Its initial focus is to help countries develop a National Adaptation Programme of Action (NAPA), which is a national strategy that identifies the most immediate needs for climate adaptation (as introduced in section 1).

[35] https://www.thegef.org/
[36] https://www.thegef.org/topics/special-climate-change-fund-sccf
[37] https://www.thegef.org/topics/least-developed-countries-fund-ldcf

To date, LDCF has worked with 51 LDCs to develop their NAPA, and it funds over 250 projects in support of the NAPAs. Like the SCCF, projects under the LDCF tend to be implemented through the multilateral development banks and the United Nations organizations. Examples include a project in Malawi to help communities improve the resilience of agriculture while boosting community economic development; assisting with drought resistance and water harvesting in Niger; and building weather stations and developing crop suitability maps in Samoa to help farmers plan for changes in weather patterns in both the short and long term. In addition to these individual-country projects, LDCF also supports multiple-country programmes. In Rwanda, a project with USD 3.9 million from the LDCF and USD 12.4 million in co-financing seeks to reduce vulnerability to climate change both through early warning and disaster preparedness systems, and through integrated watershed management in flood-prone areas. This work is in support of Rwanda's NAPA, which highlighted the risks not only of flooding and landslides but also excessive heat and drought.

As both the SCCF and the LDCF operate in support of national climate adaptation strategies, FFPOs' access to them will require a lobbying effort to get a seat at the table where such strategies are developed and plans for implementing them are laid out. FFPOs need to be in a position to make the case for the role they can play in mobilizing their members.

Useful documents
Financing Climate Action (Overview of SCCF and LDCF)[38]
GEF Strategy for SCCF and LDCF Operational Improvements[39]

Adaptation Fund (AF)[40]
https://www.adaptation-fund.org/

The Adaptation Fund was established under the UNFCCC to help vulnerable communities in developing countries adapt to climate change. To date it has allocated over USD 530 million for climate adaptation and resilience, supporting over 80 specific projects in about 60 countries. It is funded both by government and donors and by funds recovered from carbon emissions under the Kyoto Protocol, one of the original UNFCCC international climate agreements.

Projects under the Adaptation Fund fall under 8 different categories including forestry and agriculture, and also a multisector category. They range in value from just under USD 1 million to about USD 10 million.

Additional examples can be found below.[41]

[38] https://www.thegef.org/publications/financing-adaptation-action-0
[39] https://www.thegef.org/sites/default/files/documents/EN_GEF.LDCF_.SCCF_.24.03_Programming_Strategy_and_Operational_Policy_2.pdf
[40] https://www.adaptation-fund.org/
[41] https://www.adaptation-fund.org/projects-programmes/

Under the Adaptation Fund, a project called Promoting Climate-Smart Agriculture in West Africa is working to help farmers and pastoralists adapt to climate change in Benin, Burkina Faso, Ghana, Niger and Togo. The project, which is implemented by the West African Development Bank, involves three components: 1) strengthening knowledge and technical capacity for promoting agricultural practices that are resilient to climate change; 2) scaling up best practices related to agriculture and pastoralism; and 3) sharing knowledge and disseminating lessons learned in these areas.
In Uganda, another project under the Adaptation Fund focuses on promoting resilience to climate change through catchment-based integrated management of water resources. This project is worth USD 7.7 million and is executed by Uganda's Ministry of Water and Environment. The project has the following components: 1) support sustainable management of forests, wetlands and riverbanks; 2) promote water harvesting and flood control structures in agricultural landscapes; 3) support access to credit and markets for income generating activities; and 4) build the capacity of extension services in support of sustainable watershed management in support of climate adaptation.

Applications to the Adaptation Fund must go through a national, regional or multilateral implementing entity. A list of eligible entities can be found below.[42] Each country has a designated authority or contact person; the list can be found below.[43]

Useful documents
Adaptation Fund Briefing Note[44]
Adaptation Fund's system of Direct Access for National Implementing Agencies: see below[45] for information in English, French and Spanish.

Climate Investment Funds[46]

The Climate Investment Funds (CIF) programme was established in 2008 and is managed by the World Bank and the other multilateral development banks (African Development Bank, InterAmerican Development Bank, Asian Development Bank). Its stated objective is to help countries embark on a path of low-carbon and climate-resilient development. It consists of two separate funds: the Clean Technology Fund (CTF),[47] and the Strategic Climate Fund (SCF).[48] The SCF is relevant to FFPOs because it funds activities most pertinent to forests.

As of this writing, 72 countries participate in the CIF. They begin with a 1–to–3-year phase in which the national government, together with multilateral development banks and domestic partners, designs an investment plan for CIF that aligns with plans for both national development and climate strategies and goals. In the second phase, over the course of 1–2 years they prepare a specific project. Finally, in a third phase the project is carried out over 3–7 years.

[42] https://www.adaptation-fund.org/apply-funding/
[43] https://www.adaptation-fund.org/apply-funding/designated-authorities/
[44] https://www.adaptation-fund.org/wp-content/uploads/2017/05/AF-Briefing-Note_Nov.-2018.pdf
[45] https://www.adaptation-fund.org/knowledge-learning/knowledge-products/?type=infographics-flyers
[46] https://www.climateinvestmentfunds.org/
[47] https://www.climateinvestmentfunds.org/topics/clean-technologies
[48] https://www.climateinvestmentfunds.org/topics/sustainable-forests

The Forest Investment Programme (FIP), [49] part of the SCF, aims to promote natural resource management that is good for forests, good for development, and good for the climate. In particular, it aims to reduce deforestation and forest degradation through grants and low-interest loans to governments, communities and businesses for sustainable forest management. The focus is on institutional capacity-building and on public and private investments that are in line with the country's REDD readiness strategy. Examples of FIP projects can be found below.[50]

The Private Sector Set Asides (PSSA)[51] programme is a specific avenue under the FIP for providing concessional loans for investments under the private sector. This is because most FIP support is for the public sector. PSSA supports investments involving both large- and small-scale producers, and several PSSS-supported projects involve FPPOs. To date, 13 projects in 10 countries have been funded; descriptions can be found here.

The FIP also includes the Dedicated Grant Mechanism for Indigenous People and Local Communities (DGM), described below.

Useful documents
Climate Investment Funds Knowledge Center[52]

Dedicated Grant Mechanism for Indigenous Peoples and Local Communities (DGM)[53]

The DGM is a special component of the Forest Investment Programme (FIP) described above that began disbursing funding in 2015. With a portfolio worth about USD 80 million to date, DGM supports projects with a specific design based on the national context and the priorities of Indigenous Peoples and local communities. In each country, DGM activities are led by a steering committee comprising members of Indigenous Peoples and local communities.

The DGM supports projects in 14 countries (9 in progress, 5 pending approval). In Brazil and Mexico, projects worth USD 6.5 and USD 6 million, respectively, engage Indigenous communities in REDD+ and other forest-based climate change programmes. In Peru, a project worth USD 5.5 million helps Indigenous communities in the Amazon to improve their sustainable forest management practices. In Indonesia, a USD 6.5 million project helps Indigenous peoples and local communities to engage in tenure security processes and livelihood opportunities from sustainable forest management. Descriptions of these and other DGM projects can be found below.[54]

[49] https://www.climateinvestmentfunds.org/topics/sustainable-forests
[50] https://www.climateinvestmentfunds.org/topics/sustainable-forests
[51] https://www.climateinvestmentfunds.org/private-sector-set-asides
[52] https://www.climateinvestmentfunds.org/knowledge-center
[53] https://www.dgmglobal.org
[54] https://www.dgmglobal.org/countries

Saweto Dedicated Grant Mechanism for Indigenous Peoples and Local Communities, Peru

This project works with Indigenous communities on legal recognition of land rights to help them protect against illegal encroachment. This is a critical enabling factor for better natural resource management and a portion of the project funding also offers support in that regard. The project is based in part on evidence showing that deforestation rates fall on Indigenous Peoples' lands when their land rights are respected. An innovative approach to improving natural resource management includes an effort to build the capacity of Indigenous Peoples' organizations to conduct earth observations – remote sensing – for sustainable land management. This five-year project began in 2015 with a budget of USD 5.5 million.

Useful documents
Documents related to the DGM including the operational guidelines, annual reports, and newsletters can be found below,[55] available in several languages.

NAMA Facility[56]

NAMA stands for Nationally Appropriate Mitigation Action. As such, the aim of the NAMA Facility is to support the implementation of country-driven climate mitigation strategies. The NAMA Facility is based in Germany, co-sponsored by the governments of Germany, the United Kingdom and Denmark, along with the European Union.

NAMA projects cover a range of activities that reduce greenhouse gas emissions. The largest proportion of applications have focused on renewable energy and energy efficiency. About ten percent of proposals have been for projects classified in the forestry sector, and about ten percent in the agricultural sector. Examples of successful applications include projects for reforestation in Tajikistan, biomass energy promotion in Burkina Faso, expansion of improved cookstoves in Uganda and Guatemala, and reduced deforestation associated with coffee production in Peru. Project budgets normally are in the range of EUR 5 to 20 million (around USD 6 to 24 million), with up to fifteen months for project preparation and 3–5 years for implementation. All NAMA projects take place in a single country.

Because NAMA projects must be part of the national climate change mitigation strategy, obtaining NAMA funding is only feasible through partnership with a government agency. This will require a lobbying effort to establish regular communication between that national-level FFPO and the relevant government ministry that would be a logical partner. This requires understanding how the farm and forestry sectors fit into the country's national strategy for climate reduction, and how FFPOs would be able to help the country carry out that strategy.

Useful documents
Beginner's guide to NAMAs[57] (From Carbon Market Watch)
Sixth call for proposals to the NAMA Facility, 2019[58]

[55] https://www.dgmglobal.org/documents
[56] https://www.nama-facility.org/
[57] https://carbonmarketwatch.org/wp-content/uploads/2015/06/a-beginners-guide-to-namas-web_final.pdf
[58] https://www.nama-facility.org/fileadmin/user_upload/6th_Call_General_Information_Document_English.pdf

6.2. Bilateral funding sources

Bilateral institutions deliver a significant amount of public climate finance. Bilateral funds are administered largely through existing development agencies from developed countries whereas a number of countries have also set up special bilateral climate funds. The mandates and the way in which Bilateral Funds work depend on the regulations and objectives of their country of origin.

Global Climate Change Alliance Plus (GCCA+) Initiative[59]

The Global Climate Change Alliance Plus (GCCA+) is a European Union initiative that is helping the world's most vulnerable countries to address climate change. It started with four pilot projects in 2008, and now is an initiative that has funded over 70 projects of national, regional and worldwide scope in Africa, Asia, the Caribbean and the Pacific. This initiative supports the most vulnerable countries to climate change in implementing their national commitments, such as the Nationally Determined Contributions (NDCs) and National Adaptation Plans (NAPs).

Overall, the GCCA+ works in three main areas of intervention:

1. Mainstreaming climate change into poverty reduction and development efforts;
2. Increasing resilience to climate-related stresses and shocks (promoting disaster–risk reduction);
3. Supporting the creation and implementation of concrete adaptation and mitigation strategies, plans and actions.

Useful documents
Documents related to the GCCA+ can be found here: http://gcca.eu/funding/how-does-gcca-funding-work

GCCA+ in the Democratic Republic of the Congo: support for training and reforestation

From 2012 to 2017, the GCCA+ invested EUR 12.05 million to support training programmes on adaptation- and mitigation-related topics, the restoration and management of degraded forests and establishment of agroforestry systems in the east of the DRC. Some of the key achievements were the construction and rehabilitation of training and research facilities, establishment of 3 029 hectares of forest plantations, training services for more than 1 200 participants, and five axes of research developed (bush meat, governance–CITES, forest dynamics, large wildlife and non-wood forest products).

International Climate Finance (ICF)[60]

The International Climate Finance is a UK government commitment to support developing countries to respond to the challenges and opportunities of climate

[59] http://www.gcca.eu/
[60] https://www.gov.uk/guidance/international-climate-finance

change. The ICF is channelled through three governmental dependencies, the Department for Environment, Food & Rural Affairs (Defra), the Department for Business, Energy & Industrial Strategy (BEIS) and the Department for International Development (DFID). The ICF expects to invest GBP 5.8 billion for the period 2016–2021 and its approach is aligned with the UK's main aid strategy that covers:

- Strengthening global peace, security and governance;
- Strengthening resilience and response to crises;
- Promoting global prosperity; and
- Tackling extreme poverty and helping the world's most vulnerable.

The Improving Resilience in South Sudan programme (IRISS)

The IRISS funded by the ICF is working in building resilience to floods and droughts in South Sudan. This programme promoted a community-based combination of Agro-pastoral and Farmer Field School (APFS/FFS), vegetable gardening and Village Savings and Loan Associations (VSLAs). IRISS helps community members to build climate-resilient agriculture. The intervention has supported the training of over 2 900 people in climate-resilient agriculture techniques and helped to expand the availability of food through crop diversification.

Useful documents

Since the ICF funds are delivered by the UK's three government dependencies, organizations outside of the UK Government cannot independently apply for ICF funding. It is recommended that in-country projects apply to the UK delivery partners.

International Climate Initiative (IKI)[61]

The International Climate Initiative (IKI) of the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) aims at financing climate and biodiversity projects in developing and newly industrializing countries, as well as in countries in transition. IKI provides financial support to:

- Mitigating greenhouse gas emissions: IKI supports countries for implementing policy instruments to achieve GHG emissions reduction such as Nationally Determined Contributions (NDCs), Nationally Appropriate Mitigation Actions (NAMAs), monitoring, reporting and verification (MRV) systems, among others;
- Adapting to the impacts of climate change: the initiative supports projects that test specific Ecosystem-based Adaptation (EbA) approaches on the ground and promotes the development and implementation of National Adaptation Plans (NAPs) to support particularly vulnerable countries and regions to adapt to the effects of climate change;
- Conserving natural carbon sinks with a focus on reducing emissions from deforestation and forest degradation (REDD+): this area is focused on the

[61] https://www.international-climate-initiative.com/en/

implementation of National REDD+ and Forest Landscape Restoration Strategies to support countries' NDCs; and

- Conserving biological diversity: The IKI is a key element of financing the commitments in the framework of the Convention on Biological Diversity (CBD). It finances projects to conserve, restore and sustain the use of nature reserves and ecosystems and contribute to strengthening the capacity of governments and civil society to implement the Aichi targets.

Climate Change Adaptation through biodiversity promotion in Vietnam

From 2010 to 2014, IKI financed activities to increase the protective effect of coastal forests through the sustainable use of resources and biodiversity promotion in the Bac Lieu Province of Vietnam. Within the project's support, communities rehabilitated 100 hectares of mangrove forest; famers implemented more ecologically friendly farming systems that resulted in an average increase in income of 30 percent; and support was provided to provincial government in the implementation of land-use planning for climate change adaptation.

Useful documents

Information for the selection process regarding thematic areas and selection procedure can be found here: https://www.international-climate-initiative.com/en/project-funding/information-for-applicants/

Norway's International Climate and Forest Initiative (NICFI)[62]

Norway's International Climate and Forest Initiative aims at supporting efforts to reduce greenhouse gas emissions from deforestation and forest degradation (REDD+) in developing countries. NICFI collaborates with governments, multilateral organizations, Indigenous peoples and civil society groups to support REDD+ processes in the following countries and regions: Brazil, Colombia, Indonesia, Guyana, Ethiopia, Liberia, Peru, Tanzania, Mexico, Vietnam and the Congo Basin. To date, Brazil is the largest recipient of funding where NICFI has disbursed more than EUR 650 million and contributed to reducing deforestation in the Amazon by 70 percent.

[62] https://www.regjeringen.no/en/topics/climate-and-environment/climate/climate-and-forest-initiative/id2000712/

Ensuring Indigenous Peoples' right to land, territories and resources in Indonesia

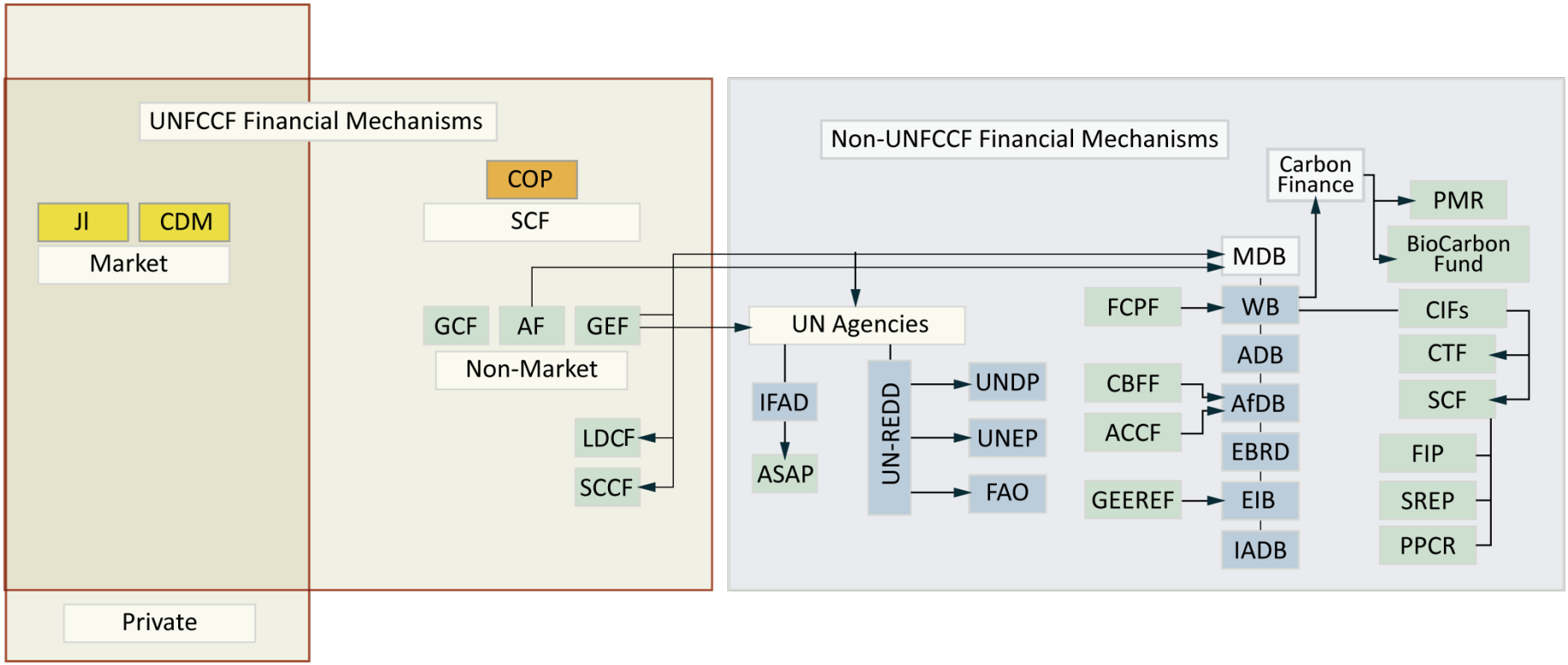
Norway is supporting the Indigenous Peoples' Alliance of the Archipelago (AMAN) to implement a project aiming to achieve full recognition of Indigenous territories and improved livelihood opportunities. With a total investment of EUR 1.4 million, the project is promoting and enhancing the participation of Indigenous and local peoples in the discussions of policies for sustainable forest management at national and district level, mapping customary lands and establishing community enterprises. These actions are helping Indigenous peoples to have an effective participation and monitoring the implementation of policies and programmes related to sustainable forest management and REDD+.

Norway's International Climate and Forest Initiative is managed by the Ministry of Climate and Environment but also the Norwegian Agency for Development Cooperation (NORAD) and several embassies have responsibilities for different parts of NICFI's portfolio.

Useful documents

For funding applications, the main selection criteria can be found here:
https://www.regjeringen.no/contentassets/f5a668d9c9fc42178457c264c9eb5fed/grant-scheme-rules_nicfi_1_october2018.pdf
and the guidelines and templates for applications are here:
https://www.regjeringen.no/contentassets/f5a668d9c9fc42178457c264c9eb5fed/template_nicfi-funding_2018.pdf

6.3. Multilateral finance



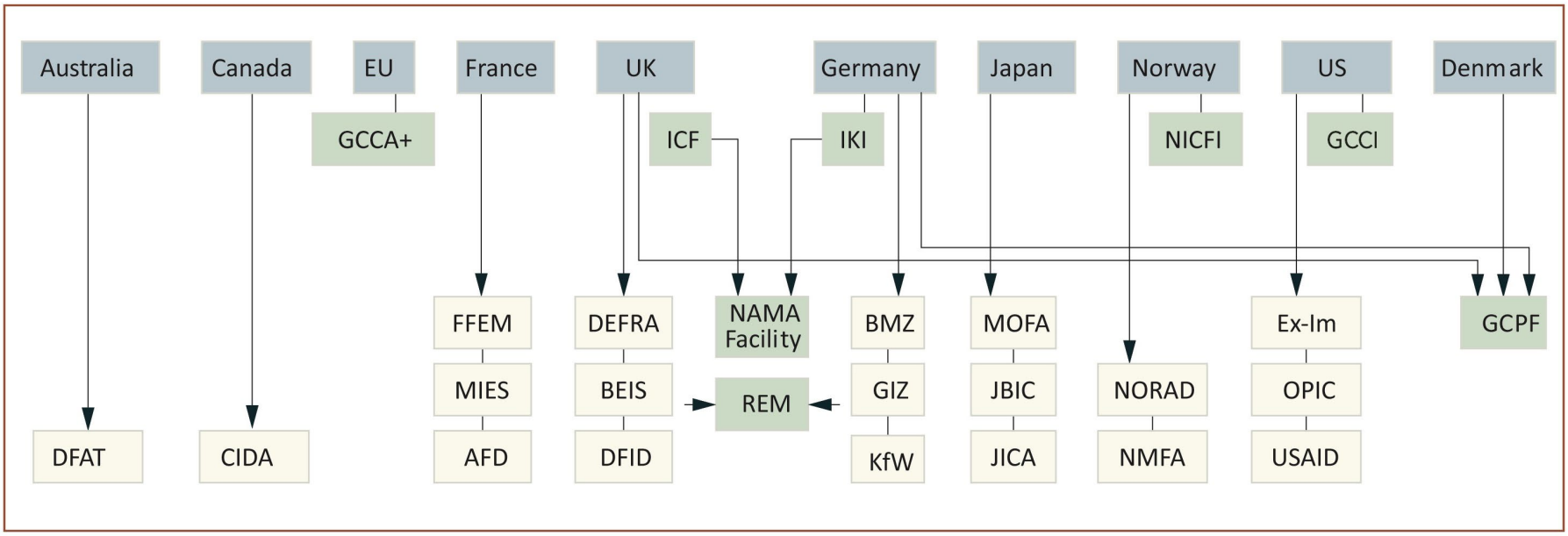
Source: https://climatefundsupdate.org/wp-content/uploads/2019/02/Architecture-2018-1024x805.png

Implementing agencies

ACRONYMS

ACCF	Africa Climate Change Fund https://www.afdb.org/en/topics-and-sectors/initiatives-partnerships/africa-climate-change-fund/
ADB	Asian Development Bank https://www.adb.org/
AF	Adaptation Fund https://www.adaptation-fund.org/
AfDB	African Development Bank https://www.afdb.org/en/
ASAP	Adaptation for Smallholder Agriculture Programme: https://www.ifad.org/en/asap
BioCarbon Fund	https://www.biocarbonfund-isfl.org/
CBFF	Congo Basin Forest Fund https://www.afdb.org/en/topics-and-sectors/initiatives-partnerships/congo-basin-forest-fund/
CDM	Clean Development Mechanism https://unfccc.int/process-and-meetings/the-kyoto-protocol/mechanisms-under-the-kyoto-protocol/the-clean-development-mechanism
CIFs	Climate Investment Funds https://www.climateinvestmentfunds.org/
CTF	Clean Technology Fund https://www.climateinvestmentfunds.org/topics/clean-technologies
EBRD	European Bank for Reconstruction and Development https://www.ebrd.com/home
EIB	European Investment Bank https://www.eib.org/en/index.htm
FAO	Food and Agriculture Organization http://www.fao.org/home/en/
FCPF	Forest Carbon Partnership Facility https://www.forestcarbonpartnership.org/
FIP	Forest Investment Programme https://www.climateinvestmentfunds.org/topics/sustainable-forests
GCF	Green Climate Fund https://www.greenclimate.fund/home
GEEREF	Global Energy Efficiency and Renewable Energy https://www.eib.org/en/products/lending/equity_funds/infrastructure_equity_funds/geeref.htm
GEF	Global Environmental Facility https://www.thegef.org/
IADB	Inter-American Development Bank https://www.iadb.org/en
IFAD	International Fund for Agricultural Development https://www.ifad.org/en/
JI	Joint Implementation https://unfccc.int/process/the-kyoto-protocol/mechanisms/joint-implementation
LDCF	Least Developed Countries Fund https://www.thegef.org/topics/least-developed-countries-fund-ldcf
PMR	Partnership for Market Readiness https://www.thepmr.org/
PPCR	Pilot Programme for Climate Resilience https://www.climateinvestmentfunds.org/topics/climate-resilience
SCCF	Special Climate Change Fund https://www.thegef.org/topics/special-climate-change-fund-sccf
SCF	Standing Committee on Finance https://unfccc.int/process/bodies/constituted-bodies/standing-committee-on-finance-scf
SCF	Strategic Climate Funds https://www.climateinvestmentfunds.org/node/5
SREP	Scaling up Renewable Energy Programme in Low Income Countries https://www.climateinvestmentfunds.org/topics/energy-access
UNDP	United Nations Development Programme https://www.undp.org/content/undp/en/home.html
UNEP	United Nations Environment Programme https://www.unenvironment.org/
UN-REDD	United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation: https://www.un-redd.org/
WB	World Bank https://www.worldbank.org/

6.4. Bilateral finance



Source: https://climatefundsupdate.org/wp-content/uploads/2019/02/Architecture-2018-1024x805.png

Implementing agencies

ACRONYMS

AFD	Agence Française de Développement https://www.afd.fr/en
BEIS	Department for Business, Energy & Industrial Strategy https://www.gov.uk/government/organisations/department-for-business-energy-and-industrial-strategy
BMZ	Federal Ministry of Economic Cooperation and Development https://www.bmz.de/en/
CIDA	Canadian International Development Agency: https://www.international.gc.ca (go to "international development funding.")
Defra	Department for Environment Food & Rural Affairs https://www.gov.uk/government/organisations/department-for-environment-food-rural-affairs
DFAT	Department of Foreign Affairs and Trade https://dfat.gov.au/pages/default.aspx
DFID	Department for International Development https://www.gov.uk/government/organisations/department-for-international-development
EXIM	Export-Import Bank of the United States https://www.exim.gov/about
FFEM	French Facility for Global Environment https://www.ffem.fr/en
GCCA+	Global Climate Change Alliance Plus http://www.gcca.eu/
GCCI	Global Climate Change Initiative https://www.usaid.gov/climate
GCPF	Global Climate Partnership Fund https://www.gcpf.lu/investing-in-renewable-energy-and-energy-efficiency.html
GIZ	German Development Agency https://www.giz.de/en/html/index.html
ICF	International Climate Finance https://www.gov.uk/guidance/international-climate-finance
IKI	International Climate Initiative https://www.international-climate-initiative.com/en/
JBIC	Japan Bank for International Cooperation https://www.jbic.go.jp/en/
JICA	Japan International Cooperation Agency https://www.jica.go.jp/english/
KfW	Bank aus Verantwortung https://www.kfw.de/KfW-Group/About-KfW/
MIES	Menni International Énergies et Services https://mies-france.fr/notre-entreprise/
MOFA	Ministry of Foreign Affairs https://www.mofa.go.jp/
NAMA	Nationally Appropriate Mitigation Action https://www.nama-facility.org/about-us/
NICFI	Norway's International Climate and Forest Initiative https://www.regjeringen.no/en/topics/climate-and-environment/climate/climate-and-forest-initiative/id2000712/
NMFA	Norwegian Ministry of Foreign Affairs https://www.regjeringen.no/en/dep/ud/id833/
Norad	Norwegian Agency for Development Cooperation https://norad.no/en/front/
OPIC	Overseas Private Investment Corporation https://www.opic.gov/
REM	REDD Early Movers https://www.kfw-entwicklungsbank.de/International-financing/KfW-Development-Bank/Topics/Climate/REDD/
USAID	United State Agency for International Development https://www.usaid.gov/

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